



TECHNICAL MEMO

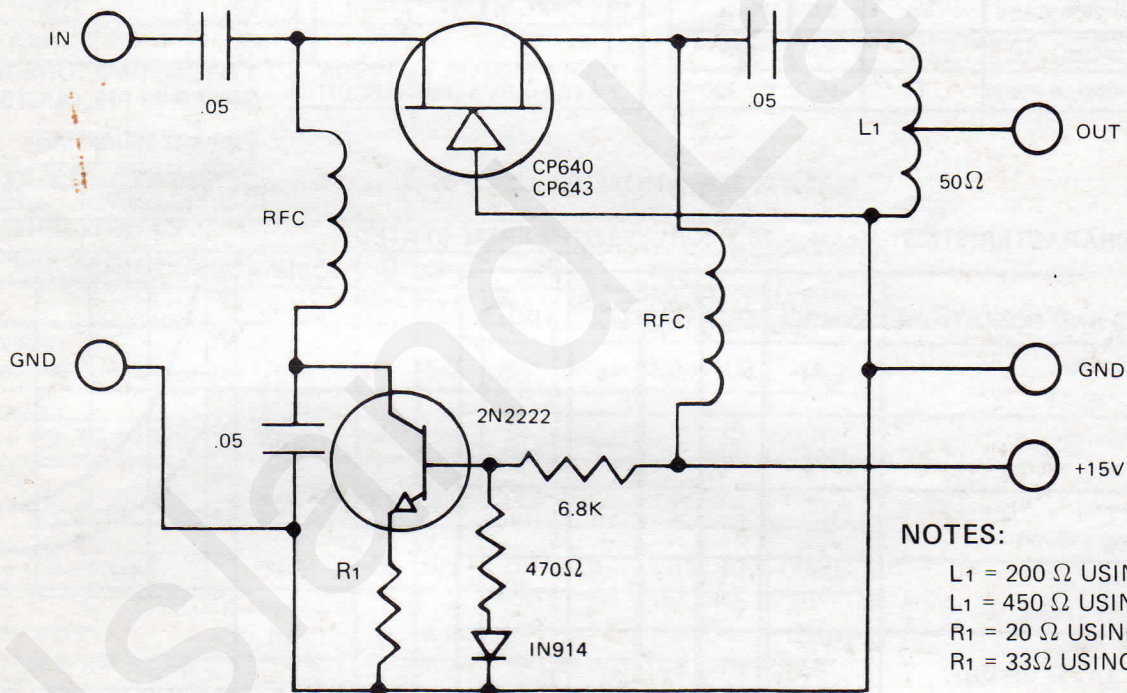
TMF 18
FET
Broadband
Amplifier



With compliments
of Island Labs

This RF broadband amplifier uses a constant current source in place of a source biasing resistor. The current source automatically sets the operating point regardless of I_{DSS} or V_p . The alternatives are selection of the source resistor or use of a high negative supply voltage ($\gg V_p$) and a high source resistor value.

The 2N2222 may be replaced by any NPN transistor with a reasonable β at 50mA. The base voltage divider includes a diode to temperature compensate for V_{BE} and sets up about 1V at the emitter. This voltage must be lower than the minimum V_{GS} at the specified I_{DS} .



The upper frequency limit of this broadband circuit can be extended by the addition of a peaking network between the FET and L_1 . An example of such a network appears in the circuit on the CP640 data sheet. The broadband input impedance of this circuit is typically 20 ohms for the CP640 and 40 ohms for the CP643.